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(71)Applicant : KUBOTA CORP

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(72)Inventor : SOEDA YUJI

IZUMI SEIJI

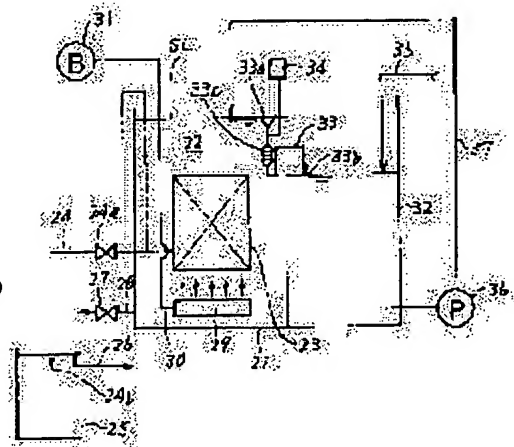
MORO MASASHI

(54) DIPPING TYPE FILTERING DEVICE

(57)Abstract:

PURPOSE: To execute the solid-liquid separation of a water to be treated without adding a special power and to reduce running cost by applying a water head corresponding to the depth of water from a fixed water level to a film separation unit.

CONSTITUTION: The film separation unit 23 is dipped and arranged at an adequate depth of water in a film separation vessel 21. An over flow pipe 33 is provided so that a water collecting opening 33a opens at an adequate position above the film separation unit 23. A take-out pipe 24 is provided so that the bottom end side is communicated with a permeated solution passage of the film separation unit 23 and the tip end side opens at the position under the film separation unit 23 in the outside of the film separation vessel 21.



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(21)Application number : 05-306643

(71)Applicant : MITSUBISHI RAYON CO LTD

(22)Date of filing : 07.12.1993

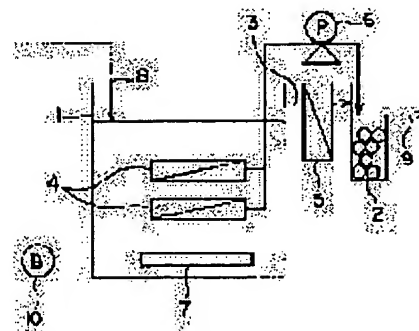
(72)Inventor : YANONE KATSUYUKI
WATARI KENJI
KOBAYASHI MASUMI

(54) WASTE WATER TREATING DEVICE

(57)Abstract:

PURPOSE: To obtain the discharged water quality always stabilized irrespective of change in flow rate of raw water by immersing a membrane separator attracted by a suction pump in a reaction tank, arranging a diffuser below it, and also inserting a membrane separator in an overflow line.

CONSTITUTION: Waste water is allowed to flow from a waste water inflow port 8 into an aerator 1 equipped with a diffuser 7 at the lower part, where organic materials, etc., turning into BOD components and COD components and decomposed by decomposing force of active sludge. After a suction pump 6 is operated to filter the treated water through a membrane module 4, it is sent to a disinfecting tank 2. At this time, when the waste water of the set quantity or above is allowed to flow into the tank 2 from the waste water inflow port 8 caused by any reason, the treated water is allowed to flow out from an overflow line 3. At this time, the treated water is allowed to flow out through a membrane module 5 being a membrane separator inserted in the overflow line. In this way, the discharged water quality always stabilized irrespective of change in flow rate of waste water is obtained.



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C02F 3/12

(21)Application number : 05-130938

(71)Applicant : KUBOTA CORP

(22)Date of filing : 02.06.1993

(72)Inventor : ISHIHARA KATSURO
TOKUSHIMA KANJI
KURIMOTO TETSUO
NARUKAMI YOSHIHISA

(54) SOLID-LIQUID SEPARATOR

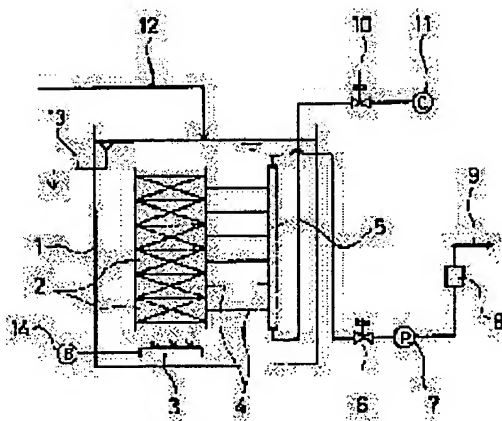
(57)Abstract:

PURPOSE: To extend the filtering continuation time of a membrane module and to reduce the number of times of chemical washing by providing a membrane permeated liquid suction means to the upper part of a water collecting pipe and providing a back pressure washing air pressure introducing means to the lower part thereof.

CONSTITUTION: A membrane permeated liquid suction means comprising a water valve 6, a suction pump 7 and a flowmeter 8 is provided to the upper end of a water collecting pipe 5. A backwashing valve 10 and a compressor 11 are provided to the lower end of the

water collecting pipe 5 so as to introduce back pressure washing air into the water collecting pipe 5 under pressure. By this constitution, back pressure washing air

is sent from the lower end of the water collecting pipe 5 under pressure to equally supply compressed air to respective membrane modules 2 to increase washing effect. Further, by sucking a membrane permeated liquid from the upper end of the water collecting pipe 5, air at a time of back pressure washing can be easily removed and the lowering of a permeated liquid flow rate caused by residual air can be prevented. Therefore, all of the membrane



modules 2 are set to the same state to make it possible to perform the solid-liquid separation of a mixed liquid 13. The lowering of a filtering continuation time is prevented and the number of times of chemical washing can be reduced.

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